

- project, using the projector, a user control onto the physical object, the user control including a visual representation correlated with a virtual element in the virtual world;
- determine a user input for controlling the virtual element in the virtual world based on a user manipulation of the physical object; and
- update, using the projector, the user control projected onto the physical object based on the user manipulation of the physical object to maintain the visual representation correlated with the virtual element in the virtual world.
2. The system of claim 1, wherein displaying the virtual world on the display surface includes projecting the virtual world onto the display surface.
3. The system of claim 2, wherein the display surface is one of a rear-projection display surface, a front projection display surface, and a touch screen display surface.
4. The system of claim 1, wherein the user manipulation of the physical object includes at least one of deforming of the physical object, a manipulation of a real-world position of the physical object, and a manipulation of a real-world orientation of the physical object.
5. The system of claim 1, further comprising a plurality of physical objects on the display surface, wherein, prior to the projecting, a user selects the physical object from the plurality of objects on the display surface.
6. The system of claim 1, further comprising a plurality of physical objects on the display surface, wherein the processor is further configured to:
- track a position of a first object the plurality of physical objects on the display surface; and
- insert a virtual object into the virtual world at a location in the virtual world corresponding to the position of the first object on the display surface.
7. The system of claim 1, further comprising a plurality of physical objects on the display surface, wherein the projector projects a first virtual element of the virtual world onto a first object of the plurality of objects.
8. The system of claim 1, wherein the user control includes a virtual user interface having at least one of a virtual button, a virtual trigger, and a virtual slider.
9. The system of claim 1, wherein the user manipulation of the physical object is tracked using one of a compass, a magnetometer, an inertial sensor, and a camera.
10. The system of claim 1, wherein the user control is a steering wheel.

11. The method for use with a system having a display surface for displaying a virtual world, a projector, a physical object, a memory, and a processor, the method comprising:
- projecting, using the projector, a user control onto the physical object, the user control including a visual representation correlated with a virtual element in the virtual world;
- determining, using the processor, a user input for controlling the virtual element in the virtual world based on a user manipulation of the physical object; and
- updating, using the projector, the user control projected onto the physical object based on the user manipulation of the physical object to maintain the visual representation correlated with the virtual element in the virtual world.
12. The method of claim 11, wherein displaying the virtual world on the display surface includes projecting the virtual world onto the display surface.
13. The method of claim 12, wherein the display surface is one of a rear-projection display surface, a front projection display surface, and a touch screen display surface.
14. The method of claim 11, wherein the user manipulation of the physical object includes at least one of deforming of the physical object, a manipulation of a real-world position of the physical object, and a manipulation of a real-world orientation of the physical object.
15. The method of claim 11, further comprising a plurality of physical objects on the display surface, wherein, prior to the projecting, a user selects the physical object from a plurality of objects on the display surface.
16. The method of claim 15, wherein the processor is further configured to:
- track a position of a first object the plurality of physical objects on the display surface; and
- insert a virtual object into the virtual world at a location in the virtual world corresponding to the position of the first object on the display surface.
17. The method of claim 15, wherein the projector projects a first virtual element of the virtual world onto a first object of the plurality of objects.
18. The method of claim 11, wherein the user control includes a virtual user interface having at least one of a virtual button, a virtual trigger, and a virtual slider.
19. The method of claim 11, wherein the user manipulation of the physical object is tracked using one of a compass, a magnetometer, an inertial sensor, and a camera.
20. The method of claim 11, wherein the user control is a steering wheel.

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